

PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of MUNEHISA FUJITA ET AL

Appln. No. 08/915,683

Group Art Unit: 1113

Filed: AUGUST 21, 1997

Examiner: M. HUFF

For: DIRECT POSITIVE PHOTOGRAPHIC SILVER HALIDE EMULSION AND COLOR  
PHOTOGRAPHIC LIGHT-SENSITIVE MATERIAL COMPRISING SAME

SUPPLEMENTAL DECLARATION UNDER 37 CFR 1.132

Assistant Commissioner of Patents  
Washington, D.C. 20231

Sir:

I am the same individual, Mr. Atsushi Matsunaga, who prepared the Declaration under 37 C.F.R. §1.132 filed on October 22, 1997 and executed on October 6, 1997.

In order to demonstrate the non-obviousness of the claimed invention, the following supplemental experimentation was conducted by me or under my direct supervision.

EXPERIMENTATION

The following procedures are similar to those in the Declaration under 37 C.F.R. §1.132 filed on October 22, 1997 in the present application.

Seed Crystal No. I1 (silver iodobromide) was prepared in the same manner as Emulsion A as disclosed in Evans and Seed Crystal No. I2 was prepared in the same manner as for Seed Crystal No. I1, except for changing the halogen composition to silver bromide. The grain surface of each sample was subjected to chemical sensitization in the co-presence of a gold sensitizer (potassium

tetrachloroaurate) and a sulfur compound as shown in the following Table 1. The resulting grain was used as a core grain and covered with an external shell to form direct positive emulsions J1, J2, J3, J4, J5 and J6 containing a core/shell internal latent image type tabular grain having the characteristics which are shown in the following table.

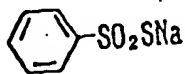
A photographic material sample (each of Sample Nos. 207 to 213 as shown in the following Table 2) was prepared in the same manner as Sample 101 in Example 1 in the specification of the present application, except for using each of the emulsions in the 8th layer, the 15th layer and the 22nd layer thereof. The sample was processed and evaluated in the same manner as in Example 1 to obtain the maximum density, minimum density, middle sensitivity, and negative sensitivity. The results thus obtained are shown in the following Table 3.

Table 1

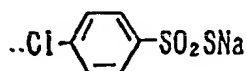
Emulsion No.	a (μm)	b (μm)	pBr	Compound No. (or Name)	Added Amount (mg/Ag-mol)	Seed Crystal No.
J1 (Comp.)	1.00	0.085	2.40	Sodium thiosulfate pentahydrate	4.4	I1
J2 (Inven.)	"	"	"	1-16	63.8	I2
J3 ( " )	"	"	"	"	4.4	I2
J4 (Comp.)	"	"	"	"	"	I1
J5 (Inven.)	"	"	"	2-3	"	I2
J6 ( " )	"	"	"	3-5	"	I2
J7 (Comp.)	"	"	"	Sodium thiosulfate pentahydrate	"	I2

The compound Nos. as shown in the above table each has a structure represented by the following chemical formula.

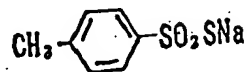
(1-16)



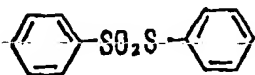
(1-17)



(1-21)



(2-3)



(3-5)

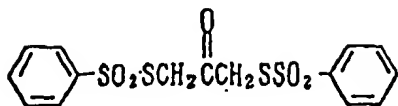


Table 2

Sample No.	8th Layer	15th Layer	22nd Layer
207 (Comp.)	J1	J1	J1
208 (Inven.)	J2	J2	J2
209 ( " )	J3	J3	J3
210 (Comp.)	J4	J4	J4
211 (Inven.)	J5	J5	J5
212 ( " )	J6	J6	J6
213 (Comp.)	J7	J7	J7

Table 3

Sample No.	Maximum Density			Minimum Density			Middle Sensitivity			Negative Sensitivity		
	Y	M	C	Y	M	C	Y	M	C	Y	M	C
207 (Comp.)	1.90	2.06	2.15	0.33	0.34	0.48	86	84	82	118	121	126
208 (Inven.)	2.13	2.33	2.45	0.17	0.16	0.24	112	132	155	78	76	80
209 ( " )	2.12	2.30	2.44	0.17	0.16	0.25	108	123	148	86	84	90
210 (Comp.)	1.94	2.09	2.18	0.30	0.31	0.44	90	87	84	112	117	121
211 (Inven.)	2.11	2.32	2.44	0.17	0.16	0.24	105	121	141	88	87	94
212 ( " )	2.12	2.31	2.44	0.17	0.16	0.25	104	119	139	89	88	95
213 (Comp.)	1.91	2.05	2.17	0.32	0.33	0.47	87	83	84	117	122	125

core 5  
AsBr SnO<sub>3</sub>  
AsBr 1-14  
AsBr 1-14  
AsBr 1-16  
AsBr 2-3  
AsBr 3-5  
AsBr SnO<sub>3</sub>

The results shown above demonstrate that when comparing Sample 209 (Inven.) using the sulfur compound according to the present invention with Sample 210 (Comp.) using the sulfur compound according to the present invention, Sample 209 gave remarkable effects including of high Dmax, low Dmin, high middle sensitivity, and low negative sensitivity at high illumination intensity, as compared with those values for Sample 210. On the other hand, when comparing Sample 207 (Comp.) using sodium thiosulfate pentahydrate as disclosed in Evans with Sample 213 (Comp.) using sodium thiosulfate pentahydrate as disclosed in Evens, Sample 207 was not substantially different in Dmax, Dmin, middle sensitivity, and negative sensitivity at high illumination intensity values from those of Sample 213.

From the above data and discussion, the core/shell internal latent image type tabular direct positive emulsion prepared by using, as a core grain, a seed crystal chemically sensitized in the co-presence of the gold compound and the sulfur compound according to the present invention, when the halogen composition of the seed crystal (core grain) in silver bromide has unexpectedly superior effects compared to when the halogen composition of the seed crystal (core grain) is silver iodobromide.

As can be seen from the results as shown in the above Table 3 (Sample Nos. 211 and 212), the effects where Compound (2-3) or (3-5) as described in the specification of the present invention was used as the sulfur compound are the same unexpected effects as when

Compound (1-16) was used as the sulfur compound. Further, the effects when Compound (1-17) or (1-21) as described in the specification of the present invention was used as the sulfur compound are the same unexpected effects as when Compound (1-16) was used as the sulfur compound.

I declare further that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Respectfully submitted,

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Mr. Atsushi Matsunaga

Date: \_\_\_\_\_